

REMARKS

Applicant has amended claims 1 and 5-8 to avoid indefinitenesses pointed out by the Examiner and to clarify the claims, but not to overcome the reference. Claims 1-9 remain in the application of which all were rejected on Bricaud (U.S. 5,746,607).

5 Applicant believes that a description of the present invention and of Bricaud will help to show their differences. The invention concerns a connector (such as 10 in Fig. 1) which has two columns of contacts (62, 64) with upper parts (30 in Fig. 6) that engage conductive pads of a device such as a smart card. Each contact has a termination end (48 in Fig. 7) that must engage a
10 trace on a circuit board (40). In the prior art, the circuit board had two rows of traces which were laterally spaced apart. The space between the two rows could not be used for other circuitry.

In the present invention, the termination ends (48 in Fig. 3) all lie along (or close) to a longitudinal line A. As a result, the termination ends of both
15 columns of contacts, can engage a single row of traces (P in Fig. 9) that extend along a line (A). The spaces above the circuit board on opposite sides of the row of traces (P), are free to hold other traces, and possibly also other circuit components.

Bricaud shows, in his Fig. 8, that his two rows of contacts have tails 44 with free ends 54 that lie in two laterally spaced rows. As a result, his Fig. 3 shows two laterally spaced rows of traces 102 for engaging the free ends of his
20 two rows of tails 44.

It is not a simple matter to form contacts out of metal strips, with upper portions (e.g. 30 in Fig. 1) lying in two column (62, 64) but with termination ends (48 in Fig. 6) lying in a single row. Applicant does this by a bend (44 in Fig. 6) that angles the contact lower portion (38) from the upper portion (32) (Fig. 3 shows the angle a).
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Claim 1 describes a connector with two laterally-spaced columns of contacts. Each contact has upper and lower contact portions (32, 38 in Fig. 6) that each lies in a vertical plane (PL and PB). The two vertical planes are angled from each other by a plurality of degrees (a in Fig. 3). As a result, the termination ends (48 in Fig. 3) of contacts of the two columns lie approximately in a single row (A) and are longitudinally spaced apart along the single row by half the spacing (G in Fig. 1) of the contacts along each column.

In Bricaud his Fig. 8 shows that his contact parts 68, 68' with ends 54 that engage his circuit board traces, lie in two laterally-spaced columns. His Fig. 5 confirms that his free ends lie in two separate columns. Bricaud's Fig. 7 shows that his card-engaging parts 34 at the top of his contacts are not longitudinally offset from the termination ends 68 at the bottom of his contacts. Thus, applicant believes that claim 1 is not anticipated by Bricaud.

Claim 2, which depends from claim 1, describes a single column of termination traces (P in Fig. 9). Bricaud's Fig. 3 shows two row of traces 102.

Claim 3, which depends from claim 1, describes a second bend (44, Fig. 6) of about 180° in each contact. The second bend is made about an axis (92) that is angled a plurality of degrees from the longitudinal direction (T). In Bricaud's Fig. 8, his bend is about an axis XI which is shown as extending in a longitudinal direction (which is perpendicular to his directions L, R).

Claim 4, which depends from claim 1, describes similar contacts of the two columns, but turned 180°. In Bricaud, his Fig. 8 shows that the contacts 26, 26' of his two columns are different. Applicant acknowledges that two columns of similar ordinary contacts turned 180° is obvious for ordinary contacts, but not for applicant's twisted contacts that produce offsets at their termination ends.

Claim 5, which depends from claim 1, describes each contact lower portion having a vertically-extending section (46 in Fig. 8). This can space the connector housing (54) from the circuit board (40) so circuit components (e.g.

resistors, capacitors) can lie on the circuit board, under the housing lower face (56). Bricaud's Fig. 8 shows a connector housing part (82) spaced from his circuit board. However, his contact lower portions (46, 46') that do the spacing are not close to the vertical, and his termination ends (54) lie in two rows rather than a single one.

Claim 6, like claim 1, describes the lower deflectable strip sections (42 in Fig. 6) extending at an acute angle to the lateral direction (L). As discussed in the case of claim 1, Bricaud does not show this.

Claims 7, 8 and 9 each depends from claim 6. Claim 7 describes the pitch of the traces (1.27mm in Fig. 9), which is discussed in claim 1.

Claim 8 describes the changes from Fig. 7 to Fig. 8 where the deflectable sections (42) deflect and the termination ends (48) move closer to the centerline (A). Bricaud does not suggest this.

Claim 9 describes the vertically-extending termination section (46 in Fig. 8), which is discussed in claim 5.

In view of the above, favorable reconsideration and allowance of the application are courteously requested.

Respectfully submitted,



Leon D. Rosen
Attorney for Applicant
Registration No. 21,077

10960 Wilshire Boulevard
Suite 1220
Los Angeles, CA 90024
(310) 477-0578